

What is claimed is:

1. A method of cutting off a fuse electrode among a plurality of fuse electrodes extending parallel to each other, comprising the steps of:

5 setting cutting positions on adjacent fuse electrodes to positions which are different from each other in a direction in which the fuse electrodes extend; and

10 applying a laser beam to each of said cutting positions to cut off each of said adjacent fuse electrodes.

2. A method of cutting off a fuse electrode among a plurality of fuse electrodes extending parallel to each other and including adjacent fuse electrodes disposed in respective layers which are different from  
5 each other, comprising the steps of:

focusing a laser beam onto a fuse electrode in one of the layers to be cut off; and

10 cutting off only said fuse electrode onto which said laser beam is focused, with the laser beam at a predetermined position thereon.

3. An apparatus for cutting off a fuse electrode among a plurality of fuse electrodes extending parallel

to each other and disposed in an integrated circuit device, comprising:

5 a holding stage for holding said integrated circuit device in a predetermined position;

a laser unit for applying a laser beam to cut off the fuse electrode to said integrated circuit device held by said holding stage;

10 a slide unit for moving said holding stage in a predetermined direction; and

an operation controller for setting cutting positions on adjacent fuse electrodes to positions which are different from each other in a direction in  
15 which the fuse electrodes extend, and controlling said laser unit and said slide unit to apply a laser beam to each of said cutting positions.

4. An apparatus for cutting off a fuse electrode among a plurality of fuse electrodes extending parallel to each other and disposed in an integrated circuit device, said fuse electrodes including adjacent fuse  
5 electrodes disposed in respective layers which are different from each other, comprising:

a holding stage for holding said integrated circuit device in a predetermined position;

a laser unit for applying a laser beam to cut off  
10 the fuse electrode to said integrated circuit device held by said holding stage;

a slide unit for moving said holding stage in a predetermined direction; and

an operation controller for controlling said laser  
15 unit and said slide unit to apply a laser beam to the fuse electrode, and controlling said laser unit to focus the laser beam onto only the fuse electrode to be cut off.

5. An integrated circuit device comprising:  
a plurality of fuse electrodes extending parallel to each other; and

*sub*  
a plurality of windows associated respectively  
5 with said fuse electrodes, said windows including windows associated respectively with adjacent ones of said fuse electrodes and disposed in respective positions which are different from each other in a direction in which the fuse electrodes extend, said  
10 windows being defined by an insulating film having a thickness which allows a laser beam to pass therethrough to cut off the fuse electrodes.

6. The integrated circuit device according to claim 5, wherein said insulating film includes a region other than said windows, said region having a thickness which prevents said laser beam from damaging the fuse  
5 electrodes.

7. An integrated circuit device comprising:

a plurality of fuse electrodes extending parallel to each other and including adjacent fuse electrodes disposed in respective layers which are different from  
5 each other; and

a cover layer disposed on said fuse electrodes and comprising an insulating film having a thickness which allows a laser beam to pass therethrough to cut off the fuse electrodes.

8. A method of manufacturing an integrated circuit device having a plurality of fuse electrodes extending parallel to each other, a plurality of windows associated respectively with said fuse  
5 electrodes, said windows including windows associated respectively with adjacent ones of said fuse electrodes and disposed in respective positions which are different from each other in a direction in which the fuse electrodes extend, said windows being defined by  
10 an insulating film having a thickness which allows a laser beam to pass therethrough to cut off the fuse electrodes, and a logic circuit having a wiring pattern, said method comprising the steps of:

fabricating said fuse electrodes together with the  
15 wiring pattern of said logic circuit;

growing an insulating layer on said fuse electrodes and said wiring pattern; and

defining a contact hole and said windows in said  
insulating layer, said contact hole reaching said  
20 wiring pattern.

9. The method according to claim 8, wherein said  
step of growing an insulating layer comprises the step  
of growing said insulating layer to a thickness which  
prevents said laser beam from damaging the fuse  
5 electrodes, in a region other than said windows.

10. A method of manufacturing an integrated  
circuit device comprising a plurality of fuse  
electrodes extending parallel to each other and  
including adjacent fuse electrodes disposed in  
5 respective layers which are different from each other,  
a cover layer disposed on said fuse electrodes and  
comprising an insulating film having a thickness which  
allows a laser beam to pass therethrough to cut off the  
fuse electrodes, and a logic circuit having a plurality  
10 of wiring patterns disposed in respective layers, said  
method comprising the steps of:

fabricating said wiring pattern and said fuse  
electrodes together in each of said layers;

defining a contact hole reaching the wiring  
15 pattern in one of said layers, and removing the  
insulating film over the fuse electrodes in the same

layer as said one of the layers while leaving  
predetermined thickness thereof; and

depositing a cover layer having a predetermined  
20 thickness over the fuse electrodes in each of the  
layers.

Added  
B<sub>1</sub> 7